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## REMARKS

Reconsideration and allowance are respectfully requested in light of the above amendments and the following remarks.

Applicant acknowledges with appreciation the indication in the Office Action of allowable subject matter in claims 2-4 and 6-8.

Claims 1-14 have been cancelled in favor of new claims 15-27, which better define the subject matter Applicant regards as the invention. Support for the features of claims 15-27 is provided in the original claims and in the specification on page 14, lines 12-16, page 18, lines 15-21, and page 19, line 19, through page 20, line 2. New claims 15-27 have been drafted to avoid the rejection of the original claims under 35 USC §112, second paragraph.

Claims 1, 5, and 9-14 were rejected, under 35 USC §102(b), as being anticipated by Yokomizo (US 5,768,599). To the extent these rejections are deemed applicable to new claims 15-27, Applicant respectfully traverses.

Features of the present invention, as generally recited in independent claim 15, include: (1) providing an interrupt manager and an interrupt mask canceller that are independent of an interrupt handler and (2) implementing multiple interruption processing, of two levels or greater, that changes the state of

the interrupt manager and the interrupt mask canceller while interrupt processing is in progress. An advantage that may be provided by these features is that, when it becomes necessary to change the interrupt handler processing, such as when additional interrupts are to be accepted within an interrupt task or when additional interrupts are to be disabled, the change need only be applied to the interrupt manager and the interrupt mask canceller. Accordingly, it is possible to create an interrupt processing task that does not consider, or depend on, the interrupt management state of the interrupt handler. In other words, according to the present invention, it is possible to implement update control of the interrupt state dynamically and independently of the interrupt handler.

By contrast to the above-noted features of the claimed invention, Yokomizo discloses a method of managing: (1) an interrupt to which a system call is issued and (2) an interrupt to which a system call needs not be issued (Yokomizo col. 5, lines 16-21). According to this method, an interrupt that does not require a system call is processed without delay, though one that requires a system call cannot be processed until processing is finished for a previously received interrupt that also required a system call. In other words, Yokomizo discloses an

interrupt managing system that implements only a two-level multiple interrupt managing method.

The present claimed invention relates to multiple interruption of two levels or more. There is no disclosure in Yokomizo that is equivalent or related to the above-noted feature of the present claimed invention of providing an interrupt manager and a interrupt mask canceller independently of an interrupt handler. Moreover, Yokomizo does not disclose implementing multiple interruption processing, for two or more levels of interruption, that changes the state of the interrupt manager and the interrupt mask canceller while interrupt processing is in progress for another interrupt.

The Office Action proposes that Yokomizo discloses an interrupt managing means for holding, independently of an interrupt handler, interrupt acceptance possibility states prepared for each source in a mask table 30 (Office Action page 3, last paragraph). However, Yokomizo discloses that an interrupt controller 12 includes an interrupt mask table 30 for masking interrupts individually for the interrupt inputs (Yokomizo col.4, lines 42-44). This particular structure corresponds to the interrupt mask section in the interrupt controller of the present claimed invention, not to the claimed interrupt manager.

The interrupt manager of the present claimed invention is provided independently of an interrupt handler so as to hold interrupt acceptance possibility states that enable an interrupt source only when this interrupt source has a higher interrupt level than an interrupt source that is being processed. There is no disclosure of this particular feature of the present claimed invention in Yokomizo.

The Office Action also proposes that the interrupt mask canceller of the present claimed invention corresponds to Yokomizo's interrupt enabling processing means 8 (Office Action page 3, last paragraph). However, Yokomizo's interrupt enabling processing feature only enables disabled interrupts by cancelling all masks for the disabled interrupt sources, so as to create an interrupt enabling state for each source (see Yokomizo col.9, lines 24-25).

By contrast to Yokomizo's disclosure, the interrupt mask canceller of the present claimed invention is provided independently of an interrupt handler to implement interrupt enabling control of a new interrupt source while another interrupt source is being processed. There is nothing in Yokomizo that is similar to this particular feature of the present claimed invention.

Furthermore, the Office Action proposes that the claimed multiple interrupt controller that performs mask update control according to processing of the interrupt manager and the mask canceller corresponds to Yokomizo's interrupt controller 12 (Office Action page 3, last paragraph). However, Yokomizo only discloses an interrupt controller, having a plurality of individually maskable interrupt inputs, that transmits an interrupt to a CPU in response to an input received by an unmasked one of the maskable interrupt inputs (Yokomizo col.9, lines 32-36).

By contrast to Yokomizo's disclosure, the claimed multiple interrupt controller saves, upon occurrence of an interrupt, an interrupt mask state for disabling the interrupt source and an interrupt acceptance possibility state. Also, based on the interrupt acceptance possibility state and a control state of the interrupt mask canceller, the multiple interrupt controller updates the saved interrupt mask state and sets an interrupt mask for interrupts generated subsequently by other sources. Yokomizo does not disclose these features.

In accordance with the above discussion, Applicant submits that Yokomizo does not anticipate the subject matter defined by claim 15. Independent claims 26 and 27 also recite the features distinguishing claim 15 from Yokomizo. Therefore, allowance of

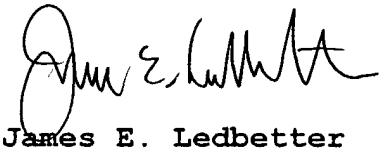
claims 15, 26, and 27 and all claims dependent therefrom is warranted.

Claims 19 and 23-25 similarly recite the features distinguishing apparatus claim 15 from Yokomizo, but with respect to method claims. For similar reasons that these features distinguish claim 15 from Yokomizo, they also distinguish claims 19 and 23-25. Therefore, allowance of claims 19 and 23-25 and all claims dependent therefrom is warranted.

In view of the above, it is submitted that this application is in condition for allowance and a notice to that effect is respectfully solicited.

If any issues remain which may best be resolved through a telephone communication, the Examiner is requested to telephone the undersigned at the local Washington, D.C. telephone number listed below.

Respectfully submitted,



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